

Device Assessment Notes—Manuals



Monitors, Notebook Computers, Desktop Computers, Non-PC Computers, Projectors, Personal Digital Assistants (PDAs), Inkjet Printers, Copiers, Network Equipment, Home Audio/Video Equipment, Appliances, Operating Systems


Monitors

M1: Samsung 1200NF

Terms: Warm-up Time, Power indicator, Power button, PowerSaver, Power-Saving Function mode, Power-off Mode, normal operation.

“Warm-up” refers to the “time to become thermally stable the first time you turn [it] on each day”; this in reference to making adjustments to the CRT, not to the time before it becomes useable. “PowerSaver” is a “built-in power management system”.

Behavior: The power indicator is “green during normal operation”, blinks green (one second cycle) in ‘off’ mode, and amber when making adjustments (it doesn’t specify if intermediate power modes are supported). Page 25 refers to amber blinking as indicating a low-power mode, so it may support intermediate modes.

Other: The power button uses the  symbol. It is noted: “For energy conservation, turn your monitor OFF when it is not needed, or when leaving it unattended for long periods”.

M2: Samsung 770TFT

Terms: Mostly the same as **1200NF** except “indicator light” used in addition to “Power indicator”; also uses Standby Mode, Sleep Mode Position A1, and Deep Sleep Mode Position A2. Uses the phrases “switching your monitor into a low-power mode” and “not been used for a certain amount of time”.

The “Power-Saving Function mode” is identified as “EPA/NUTEK”.


Behavior: The indicators are green for “normal operation”, amber for “Standby Mode”, green/amber blinking (0.5 second) for A1, and amber blinking (1 second) for A2. All three low-power modes are listed as using <5 W of power, so it may not be obvious to the user why it is important to distinguish them. The power indicator “blinks amber once” when configuration changes are being made via the on-screen display.



M3: Samsung 240

The **Samsung 240** model (a larger LCD) is similar to the 770TFT except that the A1 indication is just amber blinking, not green/amber. The warm-up time for CRTs is 30 minutes (1200NF) and for LCDs 20 minutes (770 TFT and 240T). The 770TFT manual includes French and Spanish. “PowerSaver” is left unchanged; “On, Standby, Sleep, Deep Sleep” are translated as “Marche, Repos, Sommeil, Sommeil profond” and “On, Espera, Dormido, Muy dormido”.

M4: HP D2826S, D2826A (15’')

Terms: On/Off switch, Status indicator, Suspend mode, Sleep mode, Off mode.

Behavior: On the On/Off switch is the  symbol, with the status indicator immediately to the left (it is also called the “front panel indicator light”). Curiously, the indicator is said to be “yellow” and “amber” in Suspend and Sleep modes respectively; what the difference might be between these is not clear.

Other: It is noted that “Sleep mode ... may also be referred to as Off mode”. The manual uses the  symbol in referring to the on/off switch, but the drawing of the front panel below it clearly shows the  symbol.

Notebook Computers

N5: HP Pavilion 5000

Terms: Power switch (sometimes called the power button), Status lights, Blue standby button, Status panel, System-off button, Multimedia power, automated power management, manual power management .

The “Status lights” include Power and Battery.

Behavior: The “power status light” is green when on, amber in standby, and off in off or hibernate. When attached to AC power, the battery status light is really a ‘battery charging LED’ (p.132)—green when the battery is full, amber when it is charging, and red when there is a problem; it is not specified what the indicator does when not connected to AC power. The status LCD (visible when the lid is closed) can display the “power management status”: “ON”, “OFF”, “STBY” (standby), or “ZZZZ” (hibernate). There seem to be modes in which the monitor and/or hard disk can be turned off which can be exited from by using the keyboard or mouse, whereas standby is only exited by the standby or power button.

The CD/DVD player can be used even when the rest of the notebook is off; thus, there is a separate “Multimedia power” button which is only used when the notebook itself is not fully on. The “stop” button at the CD does a “stop/eject” when the notebook is off. If the system freezes up, it is possible to reboot it by holding the power switch for five seconds, or if that doesn’t work, poke a recessed button on the side with a paper clip. The behaviors of the power button, sleep button, and lid switch can all be changed. In Windows 2000 only, “Fn+F12” sends the system into hibernation mode. Resuming from hibernate requires the power switch; resuming from standby can also be done with the standby button. “SpeedStep” settings to control how the clock speed is changed depending on power source exist in both the BIOS settings (under “Power”) and in a “Intel SpeedStep Technology” control panel. Possible settings are: “Auto”, “Disabled”, “Battery Optimized”, “Max. Performance”, “and “Reversed”. The system is set to “Auto Turn-On on dock” (this can be disabled in the BIOS).

Other: There is also an “on/off button” for the touch pad on the keyboard (though below it next to the touch pad; the power controls/indicators are above it). It is noted that suspend is a synonym for standby for Windows 98, ME, and 2000. The phrases “go to system standby”, “computer doesn’t standby”, “doesn’t respond at turn-on”, “time to resume”, “timeout periods”, and “being on standby” are used.

Toshiba Satellite 2800 (2805-S301)

Terms: Standby command, Power button, turned off, AC power light, on/off light, battery light, shutdown, standby, hibernation, Power Saver, Starting again, Power Save Modes, Long Life, Normal, High Power, alarms, CPU Frequency Mode, Automatic power off, enable, disable, Suspend, CD/DVD/Media Player power switch.

Behavior: The “power button” is at the top left of the keyboard. There is an icon next to it of a computer display and keyboard with “On” on the display.

The indicators include an “AC power light” which is green when connected to AC power, an “on/off light” which is green when on and amber when in “Standby”, and a battery light which is green when fully charged, amber when charging, or off if not AC power or if the battery is “completely discharged”. The disk lights “flashes green” when there is disk activity.

The CD player can operate with the computer otherwise off, but (not surprising), playing a DVD requires the computer to be on. If the machine is off and the “CD/DVD/Media Player power switch” is turned one way, the machine will turn on for a DVD disk but not for an audio disk (since audio playing doesn’t require it). That is, the power behavior depends on the disk type.

This system uses a custom “Toshiba Power Saver” utility rather than the standard Windows one. Both lid closing and power button pressing are programmable, and can be set to vary depending on whether the system is connected to AC power or not. The various settings are combinable into “power usage modes”, three of which are

preset: Long life, Normal, and High Power. One can switch between modes by pressing FN and F2 keys simultaneously. The F2 key has a faucet icon on it to indicate this function. A pop-up window for Shutdown can be brought up with the FN and F3 keys.

Alarms can be set to cause sounds, displayed messages, or transitions to Standby, Hibernate, or Shutdown at certain battery levels. A “Toshiba Hardware Setup” control panel covers many areas including some additional alarms, and enabling Wake On LAN (WOL). Another part of this is the “CPU Frequency Mode” which allows changing the CPU frequency and voltage depending on the power source.

A machine that won’t boot might if the power button is held for several seconds. A machine in standby that has had the battery run down will display “WARNING RESUME FAILURE”. The manual refers to display and disk power management as “Automatic power off”. A machine in use is said to be “running”. The definitions of Standby and Suspend in the glossary are identical.

The “Turning off” (“power down”) section of the manual covers standby, hibernation, and shutdown. Shutdown “shuts the computer down completely”. Standby is called a “power-saving mode”. The manual refers to “Starting again after Shut down”. To restart one is to “press the power button until the on/off light changes to green”. Opening the lid will bring the machine out of Standby or Hibernation IF it went into that mode by a lid close action, but not otherwise, so awakening behavior depends on how it went to sleep.

Other: Users are cautioned to wait at least a few seconds between a power down and a subsequent turn-on. Battery life is shortened by “leaving the computer plugged in and unused for more than a few hours” and so become overcharged.

IBM ThinkPad 390

Terms: Power Management Modes, Standby Mode, Suspend Mode, Hibernation Mode, Suspend button, Hibernate on low battery function, Fuel-Gauge program, Power-On, Suspend Timer, Power Management Button, Configuration timer setting,


Behavior: Entering Standby mode causes the LCD and any externally connected monitor to power manage. It can be entered by a timer or by pressing Fn+F3. Suspend mode can occur from a timer, closing the cover, pressing Fn+F4, or selecting the “Suspend button in the Fuel-Gauge program”. Hibernate occurs from a timer, pressing Fn+F12, the “Hibernate button in the Fuel-Gauge program”, or the “hibernate on low battery function” occurring.

There are two green LED indicators: “Suspend” mode with a moon icon, and “Power-on” with an ISO Electric Energy symbol. These are respectively off/on for “normal operation” or standby, on/off for suspend, blinking/on for transitions to and from suspend mode, and off/off for hibernate or “power off”.

In the “Thinkpad Configuration Program” (Windows 95 and 98) there is a “Power Management Button” which appears to be a battery icon. The Hibernate button is a cylinder with a triangle on it, which probably indicates ‘save to disk’. The manual notes that you may want to disable closing the lid causing suspend mode, as when a presentation is being made with an external monitor or projector. Also, if the laptop wakes up from an incoming phone call, the screen is left blank. Also, the manual notes that reducing screen brightness extends battery life.

N37: Compaq Presario 1250

Terms: Power (On/Off) Button, Power Light, Standby, Sleep, Hibernate, Time Out Default, Full Off Mode


Behavior: Standard Windows (98) control panels in manual; Windows ME on system examined. Power button and light both labeled with the  symbol. Power light is green when on, flashing green in sleep, off in hibernate and off. Pressing the power button while the system is on is stated to put it into hibernate. Sleep can be initiated by pressing Fn + F4, or a normal timeout. After 1 hour of sleep mode, the system will go into hibernate. When in hibernate, the power button brings in out of that state to full on.

Other: In the Maintenance and Service guide, hibernate is called a sleep mode, then in the next sentence it is defined as a “save to disk followed by a shut down of the computer into Off mode”. Presumably to distinguish it from hibernate, Off is at one point called “Full Off Mode”, in which one “turn[s] the computer off *completely*”.

Desktop Computers

D6: Fujitsu Siemens Scenic D

Terms: Main switch, ON/OFF switch, energy-saving functions, Power-on indicator, switched-off, ready-to-operate, switched-on, standby, energy-saving mode, DeskView / DeskOff, soft power off function, timer, idle time, time out.

Behavior: Some versions of the PC have an on/off rocker on the back and some don't; this is referred to as the “main switch” or sometimes the “power switch”. A button (the “ON/OFF switch”) is on the front panel along with a “Power-on indicator”. The  symbol is next to the indicator, but no symbol or text is apparently next to the button on the front, or on the keyboard. Turning the main switch off seems to make the front switch inoperative. The plugged-in but not switched on mode is called “ready-to-operate”; this is really that it is capable of being switched on, not that it is ready to be operated immediately. When the main switch is switched on, the power indicator will show orange, even though it is in the lowest power (off) mode. On one page of the manual it is implied that this may continue for only 15 seconds, but elsewhere it is implied that this is continuous. Alternating green and orange indicates that the machine is in an ACPI low-power state, S3 (perhaps also S4-Hibernate, though this is not explicitly referenced). The machine is stated to consume only 2 W in both S3 and ready-to-operate modes.

The manual says that “the ‘ready-to-operate’ status corresponds to the ‘stand-by’ status of a TV set”. Curiously, for models without a ‘main switch’ the comparable mode is called “switched off”. Presumably this is so that there is a mode called off available. The machine can be awakened by an incoming message or network activity from the ready-to-operate mode. Some keyboards have a power button, though in some cases it only works with ACPI operating. Holding the power switch for over 4 seconds can trigger a power-off when the machine is otherwise frozen.

The manual notes that in addition to using the front power switch, the machine can be turned ‘off’ by the operating system, or via utility software called “DeskView” (the DeskOff function of this). There is also soft power off software available for Windows NT. A software condition can exist that triggers periodic CPU activity so that “the timer for the idle time cannot time out”.

Other: This model is probably intended for non-U.S. markets—Europe and possibly Asia. Has guidance in the manual that “If you are not using your PC, switch it off.”

Dell Dimension XPS Txxx, Txxxr

Terms: Power button, Power indicator, Windows Power Management Features, System Standby, Turn Off, resume, standby mode, power off, enter standby mode, Inactivity Timer, Power Management, period of system inactivity, timeout, VESA Video Power Down, Restore on AC/Power Loss, On LAN, Wakeup on LAN.

Behavior: On the front panel is a power button and power indicator. Power management is divided into “turn off monitor”, “turn off hard disk”, “system standby” (which combines the first two and more), and “hibernate”. The status of an Uninterruptible Power Supply (UPS) is also available through the same control panel.

The BIOS setup screens have two relevant to power use. One includes a global switch for “Power Management”, “Inactivity Timer”, “Hard Drive”, and “VESA Video Power Down”. The ‘Timer’ has a note that it should be off if the operating system has controls, which all recent ones do, and the ‘Video’ one says to use the OS controls instead; the other two are apparently to be enabled. The example has the video option ‘Enabled’ though the text doesn’t list that as an option. The ‘Boot’ screen includes what to do after a power interruption (stay off, always on, or ‘Last State’. A final option enables or disables Wakeup on LAN.

Four internal LEDs show 'diagnostic codes'. The default (no problems) has them all off. Each can also turn yellow or green

Hewlett-Packard: General Info

An HP document ("How Power Management on HP PCs" December, 1999) notes that the mouse cannot be used to wake a system from a low-power state. The power button will always do this, and on some models either the space bar or any key on the keyboard will also wake the system.

D10: Hewlett-Packard Pavilion PCs (pre-ACPI, so mostly not used)

(from "HP Pavilion PCs – Using the Suspend/Standby Feature and Turning the Computer On/Off", http://www.hp.com/sposupport/personal_computing/support_doc/bph05034.html, copyright 1999)

Terms: Suspend, Standby, Power button, Standby button.


Suspend and standby are used as synonyms; both are used, but the button is only called Standby.

Behavior: Standby is said to be "an alternative to shutting down ... the computer goes into a low-power state, and the display is blank *as if turned off*".(emphasis added). The following phrases are used "To put the computer on standby", "the computer goes into standby mode", "Turn on", "Turn off", "computer hangs when placed or resumed from Standby (suspend) mode". On three keyboards shown, the Standby button is variously at the middle, right, and left of the keyboard, but always at the top. While many keyboard keys can be reprogrammed, the Standby button cannot (this document makes reference only to Windows 95 and 98; newer OSes provide for changing the button meaning, such as switching among low-power modes). This document appears to be "pre-ACPI", as APM is referred to and ACPI is not. Another document, ("HP Pavilion PCs – Using the Illuminated One Touch Internet Keyboard", copyright 2000) shows the "Standby" key clearly labeled with a moon icon; pressing it is said to put the "computer into a power-saving mode".

Other: "If the computer freezes pushing the STANDBY (SUSPEND) button, press ALT+TAB to remove computer from Standby mode". They do not recommend using both screensavers and standby mode. It is said that "Suspend mode may be conflicting with the Shut off Monitor setting in Windows" and that to disable Suspend it should be done in both the Power control panel and in the BIOS.

D11: Hewlett-Packard Vectra VL Series 8

Terms: Power on Status Light, Power On/Off Button (also called the Power Button), Lock/Suspend key, Automatically Switch Off, standby (power saving) mode, suspend/sleep mode.

Behavior: A key on the keyboard with a moon symbol on it (and seemingly a lock right above it) is called the Lock/Suspend key; whether the lock function can be added to the suspend function, replaced it, or both, is not clear; it is in the upper right corner. The power button on the front panel is below the power status light, which is in the  shape. The status light flashes when the device is in sleep mode. It is possible to start the machine from the power button, or (if enabled) by pressing just the space bar.

D12: Compaq Presario 5700 Series

Terms: Power Button, Power Status Light, Automatic Sleep, Sleep Mode, Timeout Settings, Sleep timeout value, Wake up events, low power/standby mode. (from "Maintenance & Service Guide – 5700 Series"; uses ACPI).

Behavior: The Power Status Light is a 12-pointed star and is to the right of the Power Button (the disk indicator is to the left). The documentation refers to the possibility of a power status light on the keyboard, but whether any current Compaq keyboards have this is unclear (the Easy Access Internet Keyboard has a Sleep button with a moon on it, but no power or sleep indicators). The "Energy States" are called On, Off, and Sleep, with the power indicator green, off, and amber respectively.

Power management is called the "Automatic Sleep" feature (the machine is put into a "sleep mode" after "timeout settings" have occurred) and "Manual Sleep" (which is accomplished by the "sleep button" or selecting from the Start menu). In the discussion, the word "standby" is sometimes used interchangeably with Sleep,

particularly as Windows 98 does so. The discussion says that the machine can be “turned off” while in sleep, though generally it is preferred to wake it up and then shut down from the Start menu; I suspect this is an error. The system can be woken up from sleep with the sleep or “CPU Power” button, or if a call comes in on the phone line (fax or modem).

D36: Compaq Presario 4800 Series

Terms: Energy Saver, On, Sleep, Soft-off, Power-off, Instant On Button. On/Off indicator light, Sleep light

Behavior: This machine is pre-ACPI but still interesting. Documentation calls power management the “Energy Saver” feature (of Windows 95). When on, a “sun-shaped On/Off indicator light glows”, and when in sleep, a “moon-shaped Sleep light” glows. Power management controls are in the “Computer Setup utility”. The machine can be put to sleep by pressing the “Instant On” button, or selecting Start/Suspend. Power off requires moving a switch on the back of the machine.

Compaq Presario 4900/5000/5100 Series

Terms: Power status light, Sleep status light, Instant on button, Sleep button.

Behavior: On the front panel, above the “Instant on button” are the sleep status light (in the shape of a moon), the hard drive light, and the power status light (a circle). On the top center of the keyboard is a sleep button with a moon on it.

Non-PC Computers (Desktops, Notebooks, Workstations, Servers)

Z14: SGI Origin 3000 Series


Terms: Power Supply LEDs

Behavior: The power supplies for these systems are in a separate rack unit from the main server. There are three LEDs on each power supply. The “Power” LED is green when on and functioning properly, and blinking when only partially on. It is off, with other LEDs on, when there is a problem.

Z15: SGI Origin 200

Terms: Status LED, Front Power Switch, Master Power Switch, powered off.

Behavior: The Status LED can be one of three colors (green, yellow, or red) or off. Solid green is the normal status while on. Several transitions are defined: power-on, “the status LED briefly flashes all three of its colors in sequence.”; boot-up, green blinking; and power-off, amber blinking. All other combinations indicate some sort of problem: any use of red, green blinking while on, or solid amber while on..


The system can be configured to automatically boot up when the master switch is turned on, or only when the front panel switch is also switched on (the default behavior changed with a software release). This switch can also be used to shut the computer down (which can also be done via software; see IRIX elsewhere in the document). The front power switch has the  symbol on it; the Status LED is to the immediate left. The master switch is an on/off rocker on the back with ‘on’ up.

Other: Users are cautioned to wait at least 10 seconds between a power off and power on. Two machines can be connected together in master/slave mode in which case the slave’s front power switch does not operate anything—the master’s front switch (as opposed to the master’s master switch!) controls both.

Z16: Apple iBook

Terms: Preserve memory contents on sleep, Memory Contents

Behavior: The standard MacOS 9 Energy Saver control panel has a third tab called “Advanced Settings” which includes a checkbox for an option to “Preserve memory contents on sleep” which is a hibernate mode. This replaces the normal low-power mode rather than supplements it. Hibernate occurs when the battery runs too low even when

it is not selected to occur otherwise. The “battery charging indicator” is amber when charging and green when fully charged. The “Power button” has the  symbol on it and is used for turning it on, putting it to sleep, or turning it off. Presumably it has an LED indicator behind it as other recent Apple products do.

The LED is fully on when the unit is on, pulsing like a heartbeat when asleep, and off when the unit is off.

New PowerBook (titanium) no symbol next to the white LED (located below the display but also viewable through the top when unit is closed)

New iBook (white) no symbol next to the white LED (located next to the latch to open the iBook)

Old iBook (tangerine, blueberry, graphite) no symbol next to the green LED (located in the display housing below the screen and also viewable through the top when unit is closed)

Projectors

Proxima DP 6850

Terms: Standby, On, Standby / On Button, Main Power Switch, Auto Off, Warming Up, Operation Status, Cool Down.

In a table of commands that can be sent from the computer to the projector, one is identified as “POWER”, which can cause the projector to “power off (standby status)” or “power on”. Full off can only be accomplished by the main power switch (a rocker switch).

Behavior: The main power switch (a rocker on a side) can turn it off and on and uses the standard symbols. . The “Standby / On” button on the top, on the remote, and available via digital computer commands can switch the machine between on and standby. It is necessary to hold the button on for at least 1 second to cause the transition to standby. The manual states to “Press the STANDBY/ON button for at least 3 seconds to power off”, suggesting that 0-1 seconds has no action, 1-3 seconds turns it to standby, and more than 3 causes off. However, it also notes that the power cannot be turned off while the lamp is being cooled after entering standby (takes approximately one minute), so turning off from the STANDBY/ON button may only be possible from the standby state after the cool-down, not from the on state.


An Auto Off function puts the projector into standby mode after a time of no input signal; can be 0-99 minutes or “none”. The manual says that the adjustment for this “Sets the time after which the power will be turned off (standby status) when there is no input signal”, suggesting a confusion between standby and off. There is a separate TIMER function unrelated to power management.

The power indicator (near the standby button, between ‘lamp’ and ‘temp’ indicators) is off when off, orange in standby, blinking green when warming up, solid green when on, and flashes orange while cooling down. Red or flashing red is used for error modes (lamp problems).

Other: This manual also available in German, French, Italian, Spanish, Dutch, and Norwegian.

Proxima Pro AV 9400

Terms: Power, Ready, Lamp Power, Turn On, Turn Off, Power Off?, Main On/Off Switch, Power Management, Stand-by mode.

Behavior: A button on the top labeled “power” is called “lamp power” in the manual, and seems to only turn the lamp on and off. A rocker switch on the side is the “Main On/Off Switch”. A “Ready” indicator is “green when projector lamp is ready to be turned on” (presumably only when the main switch is on). For the “Lamp Power” indicator (red), it is “dim when the projector is on ... brightened when the projector is in stand-by mode” (the term stand-by is not otherwise used in the manual). The several remote controls all have lamp power buttons labeled both “Power” and . There is a menu mode and one can select “Computer/Video Mode”, “Setting”, then “Power Management”.

To turn it off, any of the power buttons are pressed, whereupon the message “Power off?” will be displayed. Only when a power button is pressed a second time will the lamp turn off. The ready light will then go off for a minute while the lamp cools down, then come back on again.


The “Power Management” function, when turned “On”, will put it in “power save mode”, which is just whether or not power management is enabled, not whether a low-power mode is in effect. When enabled, the lamp will turn off if there is no signal for five minutes. A unique lamp icon is used in the control panel for power management in addition to the term. The projector may turn the lamp off on its own if the temperature gets too high (and a “warning temp” indicator will flash red). A “P-TIMER” function is unrelated to power management.

Proxima Ovation 944 (LCD Projection Panel)

Behavior: The device has a “POWER” button and indicator on the top of it. However, there is a temperature sensor inside of it so that if the temperature gets too high, a fan will come on, even if the unit is off.

Toshiba TDP-S2

Terms: Power button, standby button, running, standby mode, completely power off, sleep, standby time, normal operations, re-lighting.

Behavior: The power button is on the side with “the LED” on the top. Pressing the Standby button will blank the screen for 15 minutes (and turn off any audio) but keep the lamp on; after 15 minutes the lamp is turned off. It can be brought out of standby by pressing the standby button. The standby button on the top has both “standby” and (interestingly) the  symbol. The mouse has only the word. The LED is “orange” in standby and green in “normal operations”. The 15-minute “standby time” can be adjusted by going to Menu, then Controls; 8 options from ‘instant’ to 2 hours are available. While the lamp is “re-lighting”, the indicator flashes green. The

The remote will “sleep” if not used for a few minutes; any button press (not the ‘disk mouse’) will awaken it.

Other: It is noted that the order of device power-up is critical, with the computer generally to be turned on last. If the lamp is too hot (as it is shortly after being turned off) it won’t turn on again until the temperature is reduced sufficiently. The key combinations which ‘activate’ and ‘deactivate’ the external video port for a laptop are not standardized. Many different combinations are listed for different brands. Some appear to vary from model to model within a manufacturer.

Personal Digital Assistants (PDAs)

HP Jornada 820/820e

Terms: On/Off key, Battery charging LED, auto-suspend, Power saving, Dimming, “continuous idle time”.

Behavior: The On/Off key is at the upper right corner of the keyboard. The device goes into a “suspend” mode when that is selected from the Windows CE Start menu or by pressing the On/Off key, but this is referred to as “on” and “off” as the device has the “instant on” feature. The device also does an “auto-suspend or .. turn itself off after a preset period of continuous idle time”. The default time is 3 minutes on battery, and doesn’t occur while connected to a PC.

In the “HP Settings” application are four sets of options for screen brightness, contrast, and speaker volume, and one of these four is called “power saving”. Under the Power control panel is a “Power Status” tab which reports about the batteries, and a “Power Saving” tab. The latter allows for different “Auto-suspend” time for AC and battery power conditions. A second control will dim the display after a certain time. A screenshot is not shown so it is not known if there are any icons associated with the Power Saving tab.

For the battery LED, green is fully charged, amber is at 90 percent of full power, and red shows that battery power is low. There are five icons for AC power, battery charging, and three power levels of the battery.

Laser Printers

Tektronix PhaserShare Networking (Software)

This software is for managing a variety of Tektronix printers. Among the functions it can provide is reports listing dozens of fields of data, including several relevant to power use and management. These include the: “Activation Date” (when printer first turned on), “Accessories” (installed), “Power On Count” (number of times ‘switched on’), “Hours Since Last Power On”, “Total Time On”, “Total Warmup Time”, “Total “Offline Time”, “Total Energy Star Time”, “JetStack Standby Time”, and “Standby Time”. It is not stated what the difference is between the last three. Many of these are also available as binned distributions.

Inkjet Printers

Kodak Personal Picture Maker 200 (by Lexmark)

Terms: Idle Screen

Behavior: The display bill “go blank” after 30 minutes when the “idle screen” is displayed indicating that no photo memory card is in the printer. Whether this occurs when a card is in the printer is not clear. Pressing any key or opening the front cover will reawaken (“activate”) the display.

Copiers

Konica 7823

Terms: Power Switch, Utility Key, Energy Saver Key, Energy Saver Mode, Warming-up.

Behavior: The low-power mode (Energy Saver) can be entered manually, via a button on the upper right of the control panel, or automatically, via a timer. Any key press will awaken it out of the Energy Saver mode (presumably the key press only causes the wakeup, not the function the key accomplishes).

The delay timer is reached via the “Utility Key”, then “User’s Choice”, then “Energy Saver”. It is said to be “automatically activated at a given period of time after the copier has last been touched”. To leave the mode, you “cancel” it. A simple control-panel has “On”, “Off”, and the delay time.

A rocker switch on the side (the “Power Switch”) is up for on and uses | for on and ⏻ for off. While warming up, the display says “Warming-up. Pre-program a job” (that is, auto-start can be used).

Network Equipment

Intel Express Routers: 9510, 9515, 9520, 9525

Behavior: These devices do not have apparent power management, but the “Status” LED is green for normal operation, orange for some errors, and red for a fatal error.

Home Audio/Video Equipment

Toshiba Audio/Video Stereo Receiver XB-1507

Terms: Standby Indicator, Power Standby button, Power button, System Off button

Behavior: On front panel is an LED indicator with the word “STANDBY” next to it. Below (but not immediately) the indicator is a “POWER STANDBY” button. On the remote control are three power buttons at the top, one for

the receiver, one for the TV, and one for whatever other device is selected by the remote. AT the bottom is a “SYSTEM OFF” button which turns “OFF the power of all equipment connected to the main unit”. Other subsets of devices can be defined to be turned on and off together by the remote. On page 30 is a note that “In some devices that have been turned OFF, turning OFF the system will turn ON the power”. Perhaps the power is simply being toggled by the System Off button.

Toshiba Digital Satellite System TSR-202

Behavior: The POWER light normally is constantly lit, but changes to flashing when mail has been received. The “POWER” button on the front “turns the satellite receiver’s power on or puts the unit into standby mode”. Power can also be changed from the remote control.

A “Timer” function facilitates recording programs and is unrelated to power management.

Toshiba Audio/Video Stereo Receiver XB-2000

Terms: Power Standby/On switch, standby indicator, Receiver power, sleep.

Behavior: The power switch is labeled with “Power” and a smaller “Standby” just below it. The “Standby indicator” is labeled “Standby” and is to the immediate right of the switch. The indicator is on while the unit is in standby and off otherwise (color not specified). The remote control has a round “Receiver Power” button at the top left. In the middle is a “TV Power” button for switching on and off any of six selectable devices. A “GUI” mode can be selected from the front panel or the remote control; an option in GUI mode is “SLEEP” which will turn the unit to standby after a delay time (30, 60, or 90 minutes; 0 is off).

Other: The unit can be put into “Demo Mode” by holding the “Return” button while powering it on. The terminology of “switching the power on” and “off” is used.

Toshiba TV/VCR Combination (CV27G68/CV32G68)

Terms: Power button, Standby button, Power indicator, Auto-Power-Off, Record on Standby, OFF timer, Last Mode memory.

Behavior: On the front panel is a Power button and Power indicator (a label between is “POWER”). The indicator is red when on. A “PROG” (program) indicator is orange when the machine is set to record at a specified future time. Behind a door on the front panel is a “STANDBY” button. The remote has power at the upper right and standby in the middle right.

In TV mode, if the selected channel has no signal, after 15 minutes the “Auto-Power-Off” feature engages and the machine turns itself off. The “Last Mode Memory” feature is for when the power goes out while the TV is on; if this occurs, when the power comes back on, the TV turns itself on.

The Timer Recording featured is engaged by pressing the “Standby” button; “RECORD ON STANDBY” is displayed at the bottom of the screen, and the Program indicator lights up. Pressing “Standby” takes it in and out of this mode.

By pressing Timer on the remote, the OFF Timer is engaged. It can be set for up to 3 hours, and turns the TV off after it expires. Turning the unit on and off clears the timer.

V31: Toshiba DVD Video Player SD-4109X

Terms: Power button, Power indicator, screen saver, Automatic Power Off function.

Behavior: After ‘a long while’ of the DVD player paused, the screen saver will start. After 20 minutes of the screen saver or the player being stopped, it will turn itself off; this is the “Automatic Power Off” function and it appears that it cannot be disabled. On the remote is only the word ‘Power’. The front panel has the word “Power”; it is unclear from the manual if any symbol is present, but probably not. It is also not stated what color the power indicator is.

V32: Samsung WebTV Plus

The front panel of the receiver has a “POWER” indicator which is green when on and off when off. There is no reference to a switch on the receiver. The remote control and optional keyboard both have two POWER buttons, one labeled TV and the other labeled WEBTV or WEB (on the remote and keyboard respectively). A “Connected” indicator is yellow and “Message” waiting indicator is red.

V34: Samsung CD Minisystem SCM-6550

This device has a “timer” function with buttons on the device and the remote control to set a time to automatically wake up at. It also has a “sleep” function with a button on the remote control that starts a timer that will turn the device “off” when it expires (much like many clock radios have). Neither of these are low-power modes.

Appliances

A33: Samsung Washing Machine (P1405J et al.)

The “On/Off” button, labeled with ㉞ turns it on and off; the will also turn itself off after 10 minutes of no buttons being touched (and presumably no washing activity either). Presumably the 4-digit numeric display goes off when the unit shuts off.